

What is claimed is:

1. An ultrasonic transmitter comprising:  
a transmitter power source;  
a frequency oscillator operating at an ultrasonic frequency;  
a microcontroller assembly having an encoder capable of encoding a predetermined value, a serializer capable of serializing the encoded value, and a micro-modulator capable of micro-modulating the ultrasonic frequency of the oscillator with the serialized encoded value; and  
an ultrasonic transducer capable of transmitting the encoded value as a micro-modulated ultrasonic signal.
2. The transmitter according to claim 1, further comprising:  
a parity encoder between the encoder and the serializer.
3. The transmitter according to claim 1, further comprising:  
an operational status indicator.
4. The transmitter according to claim 1, wherein the encoder has a separate memory area capable of storing rewritable predetermined values.
5. The transmitter according to claim 1, further comprising:  
configurable encoder operation switches.

6. The transmitter according to claim 1, further comprising a low battery detector.
7. The transmitter according to claim 1, wherein the oscillator is designed to operate at an approximate frequency of 40 KHz.
8. The transmitter according to claim 1, wherein the micro-modulation shifts the ultrasonic frequency by more than 1.6%.
9. The transmitter according to claim 1, wherein the transmitter is wearable.
10. The transmitter according to claim 1, wherein the transmitted signal is randomly transmitted.
11. The transmitter according to claim 1, wherein the predetermined value is serialized into 16 bits.
12. An ultrasonic locator system comprising:
  - a transmitter comprising:
    - a transmitter power source;
    - an ultrasonic frequency oscillator;

a microcontroller assembly having an encoder capable of encoding a predetermined value, a serializer capable of serializing the encoded value, a micro-modulator capable of micro-modulating an ultrasonic frequency of the oscillator with the serialized encoded value;

an ultrasonic transducer capable of transmitting a micro-modulated ultrasonic signal;

a fixed location ultrasonic receiver;

a hub controller capable of receiving signals demodulated by the receivers; and

a system controller coupled to the hub controller.

13. The transmitter according to claim 12, further comprising:

a data base server coupled to the controller.

14. The transmitter according to claim 12, wherein the system controller is a computer system.

15. The ultrasonic locator system according to claim 12, wherein there are a plurality of transmitters, the transmitters each having a unique and predetermined value.

16. The ultrasonic locator system according to claim 12, wherein there are a

plurality of receivers.

17. An ultrasonic transmitter comprising:

signal encoding means for encoding a predetermined value into a binary encoded signal;

an oscillator means for oscillating an electrical signal;

a controller means for controlling the oscillating means to generate a micro modulated signal; and

a ultrasonic signal transmitting means for transmitting the micro-modulated signal into an ultrasonic frequency shifted wave.

18. A method for ultrasonic based location detection, comprising the steps of:

transmitting a binary encoded value as a micro-modulated frequency shifted ultrasonic signal;

detecting the ultrasonic signal with location specific ultrasonic receivers;

de-micro-modulating the detected signal;

validating the encoded value;

passing the validated value to a controller; and

determining a location of the transmitter based on the location of the receiving receiver.

19. The method for ultrasonic based location detection according to claim 18,

wherein the transmitted ultrasonic signal is transmitted for a duration of 10 m sec.

20. The method for ultrasonic based location detection according to claim 19, further comprising:

transmitting the ultrasonic signal at random intervals.

21. The method according to claim 18, further comprising:

feeding a plurality of received signals to the controller via a signal concentrator.

22. the method according to claim 21, wherein the signal concentrator is a hub.

23. The method according to claim 18, further comprising:

determining an identity associated with the encoded value

24. The method according to claim 18, further comprising:

comparing the determined location with a previously determined location to obtain a probable area of the transmitted signal.

25. The method for ultrasonic based location detection according to claim 24, further comprising:

determining the location a transmitted signal when a signal is not received, by comparing the previously determined location with known locations of receivers and unreceivable areas to obtain a probable area of the transmitted signal.